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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/395,184	09/14/1999	SHUICHI UENO	0057-2511-2Y	5567

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EXAMINER

LOKE, STEVEN HO YIN

ART UNIT PAPER NUMBER

2811

DATE MAILED: 02/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/395,184

Applicant(s)

UENO ET AL

Examiner

Steven Loke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-12 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 14-18 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 5 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. Claims 20-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses a single element is formed in a single first region in page 11 of applicant's written description. The specification never discloses the single element is formed in the first well as claimed in claims 20-23.

2. Claims 2 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Since claim 1 discloses the second well being in contact with some of said first wells to provide electrical connection therebetween and not being in contact with said first wells adjacent to said some of said first wells, it is unclear why there is a second well on both side of the predetermined boundary as claimed in claim 2.

Since claim 13 discloses the second well is formed on only one side of said second region with reference to a predetermined boundary, it is unclear why there is a second well on both side of the predetermined boundary as claimed in claim 14.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1, 4, 16, 18, 20 and 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Minami et al.

In regards to claim 1, Minami et al. shows all the elements of the claimed invention in fig. 36. It comprises: a semiconductor substrate; an element isolation film [302, 303 and the insulating film [352] formed on the top surface of the substrate] formed such as to have a predetermined depth from a main surface of the semiconductor substrate, said element isolation film dividing the area from the main surface to said depth into a plurality of first regions [306-313]; first wells [306-309] formed in the first regions, respectively; and a second well [305] formed in a second region deeper than said first wells [306-309] in said semiconductor substrate, said second well [305] being in contact with some of the first wells [306-307] to provide electrical connection therebetween and not being in contact with the first wells [308, 309] adjacent to said some of said first wells [306, 307].

In regards to claim 4, Minami et al. further discloses the second well [305] is formed on only one side of the second region with reference to a predetermined boundary.

In regards to claim 16, Minami et al. shows all the elements of the claimed invention in fig. 36. It comprises: a semiconductor substrate [11]; a plurality of element isolation films [302, 303, 352] formed such as to have a predetermined uniform depth from a main surface of the semiconductor substrate, said element isolation films dividing the area from the main surface to said depth into a plurality of first regions [306-313]; first wells [306, 307] formed in the first regions, respectively; and a second well [305] formed

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in a second region deeper than said first wells [306, 307] in said semiconductor substrate, said second well [305] being in contact with some of the first wells [306, 307].

In regards to claim 18, Minami et al. further discloses the second well [305] is formed on only one side of said second region with reference to a predetermined boundary.

In regards to claims 20 and 23, Minami et al. further discloses each of the first wells [306, 308] has a single element formed therein.

5. Claims 15-17, 22 and 23 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Taguchi.

In regards to claim 15, Taguchi shows all the elements of the claimed invention in fig. 3. It comprises: a semiconductor substrate [11]; an element isolation film [24 and the insulating film formed on the top surface of the substrate] formed such as to have a predetermined depth from a main surface of the semiconductor substrate, said element isolation film dividing the area from the main surface to said depth into a plurality of first regions [72 and the upper portions of region [73]]; first wells [72 and the upper portions of region [73]] formed in the first regions, respectively; and a second well [12a and the lower portion of the region [73]] formed in a second region deeper than said first wells [72] in said semiconductor substrate, said second well being in contact with some of the first wells; wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type (n-type), and said first and second wells on the other side are of a second conductivity type (p-type).

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In regards to claim 16, Taguchi shows all the elements of the claimed invention in fig. 3. It comprises: a semiconductor substrate [11]; a plurality of element isolation films [24 and the insulating film formed on the top surface of the substrate] formed such as to have a predetermined uniform depth from a main surface of the semiconductor substrate, said element isolation films dividing the area from the main surface to said depth into a plurality of first regions [72 and the upper portions of region [73]]; first wells [72 and the upper portions of region [73]] formed in the first regions, respectively; and a second well [12a and the lower portion of the region [73]] formed in a second region deeper than said first wells [72] in said semiconductor substrate, said second well being in contact with some of the first wells.

In regards to claim 17, Taguchi shows said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type (n-type), and said first and second wells on the other side are of a second conductivity type (p-type).

In regards to claims 22 and 23, Taguchi further discloses each of the first wells [72 and the upper portions of region [73]] has a single element formed therein.

6. Applicant's arguments with respect to claims 1, 2 and 4 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Claim 13 is allowed.

9. Claims 5 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Loke whose telephone number is (703) 308-4920. The examiner can normally be reached on 7:50 am to 5:20 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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February 14, 2002

Steven Loke  
Patent Examiner

*Steven Loke*